STANLEY®

Stanley railroad products

IW16157 HYDRAULIC IMPACT WRENCH

⚠ WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND/OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

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SAFETY, OPERATION AND MAINTENANCE
USER'S MANUAL

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SERVICING THE STANLEY HYDRAULIC IMPACT WRENCH: This manual contains safety, operation, and routine maintenance instructions. Servicing of hydraulic tools, other than routine maintenance, must be performed by an authorized and certified dealer. Please read the following warning.

⚠ WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

For the nearest authorized and certified dealer, call Stanley Hydraulic Tools at the number listed on the back of this manual and ask for a Customer Service Representative.

CERTIFICATE OF CONFORMITY
ÜBEREINSTIMMUNGS-ZERTIFIKAT
CERTIFICAT DE CONFORMITE CEE
CERTIFICADO DE CONFORMIDAD
CERTIFICATO DI CONFORMITA

CE

STANLEY

Hydraulic Tools

I, the undersigned:
Ich, der Unterzeichnende:
Je soussigné:
El abajo firmante:
lo sottoscritto:

Burrows, James

Surname and First names/Familiennname und Vornamen/Nom et prénom/Nombre y apellido/Cognome e nome

hereby certify that the construction plant or equipment specified hereunder:
bestätige hiermit, daß das im folgenden genannten Werk oder Gerät:
certifies par ceci que l' usine ou l' équipement de construction indiqué cidessous:
por el presente certifico que la fabrica o el equipo especificado a continuacion:
certifico che l'impianto o l'attrezzatura sotto specificata:

1. Category: Impact Wrench
   Kategorie:
   Catégorie:
   Categoria:
   Categoria:

2. Make/Ausführung/Marque/Marca/Marca Stanley

3. Type/Typ/Type/Tipo/Tipo: IW1615001, IW1635001, IW1615701

4. Serial number of equipment:
   Seriennummer des Geräts:
   Numéro de série de l'équipement:
   Numero de serie del equipo:
   Matricola dell´attrezzatura:

   All

5. Year of manufacture/Baujahr/année de fabrication/Año de fabricacion/Anno di fabbricazione beginning 2005

Has been manufactured in conformity with - EEC Type examination as shown.
Wurde hergestellt in Übereinstimmung mit - EEC Typ-Prüfung nach.
Est fabriqué conformément - au(x) type(s) examiné(s) comme indiqué dans le tableau ci-après.
Ha sido fabricado de acuerdo con - tipo examen EEC como dice.
E' stata costruita in conformitá con - le norme CEE come illustrato.

	Examen CEE de type			
Directive Richtlinie Directives particulières Directriz Direttiva	No. Nr Numéro No n.	Date Datum Date Fecha Data	Approved body Prüfung durch Organisme agréé Aprobado Collaudato	Date of expiry Ablaufdatum Date d´expiration Fecha de caducidad Data di scadenza
EN EN ISO ISO EN Machinery Directive	792-6 3744 8662-7 98/37/EC	1994 1995 1997 1998	Self Self Self Self	NA NA NA NA

6. Special Provisions: None
   Spezielle Bestimmungen:
   Dispositions particulières:
   Provisiones especiales:
   Disposizioni speciali:

7. Representative in the Union: Stanley Dubuis 17-19, rue Jules Berthonneau-BP 3406 41034 Blois Cedex, France.

Done at/Ort/Fait à/Dado en/Fatto a Stanley Hydraulic Tools, Milwaukie, Oregon USA Date/Datum/le/Fecha/Data 5/17/05

Signature/Unterschrift/Signature/Firma/Firma James O'Burrows

Position/Position/Fonction/Puesto/Posizione Engineering Manager

5/17/05

SAFETY SYMBOLS

Safety symbols and signal words, as shown below, are used to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER — **This safety alert and signal word indicate an imminently hazardous situation which, if not avoided, will result in death or serious injury.**

⚠ WARNING — **This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.**

⚠ CAUTION — **This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**

CAUTION — **This signal word indicates a potentially hazardous situation which, if not avoided, may result in property damage.**

NOTICE — **This signal word indicates a situation which, if not avoided, will result in damage to the equipment.**

IMPORTANT — **This signal word indicates a situation which, if not avoided, may result in damage to the equipment.**

Always observe safety symbols. They are included for your safety and for the protection of the tool.

LOCAL SAFETY REGULATIONS

Enter any local safety regulations here. Keep these instructions in an area accessible to the operator and maintenance personnel.

SAFETY PRECAUTIONS

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the tool and hose.

These safety precautions are given for your safety. Review them carefully before operating the tool and before performing general maintenance or repairs.

Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided on page 5.

The model IW16 Hydraulic Impact Wrench will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the tool and hose before operation. Failure to do so could result in personal injury or equipment damage.

• The operator must start in a work area without bystanders. Flying debris can cause serious injury.

• Do not operate the tool unless thoroughly trained or under the supervision of an instructor. Establish a training program for all operators to ensure safe operation.

• Always wear safety equipment such as goggles, ear and head protection, and safety shoes at all times when operating the tool. Use gloves and aprons when necessary.

• Inspect tool daily for loose fasteners, missing parts and leakage. Have tool repaired if necessary.

• The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.

• Maintain proper footing and balance at all times.

• Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.

• Always connect hoses to the tool hose couplers before energizing the hydraulic power source. Be sure all hose connections are tight and are in good condition.

• Do not operate the tool at oil temperatures above 140°F/60°C. Operation at higher temperatures can cause higher than normal temperatures at the tool which can result in operator discomfort.

• Do not operate a damaged, improperly adjusted, or incompletely assembled impact wrench.

• Never wear loose clothing that can get entangled in the working parts of the tool.

• Keep all parts of your body away from the rotating parts. Long hair or loose clothing can become drawn into rotating components.

• Always use accessories that conform to the specifications given in the OPERATION section of this manual.

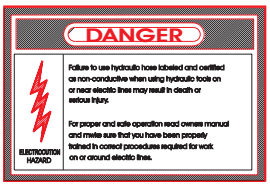
• Do not reverse impact wrench rotation direction by changing fluid flow direction.

• Release the trigger if the power supply has been interrupted.

• When working near electrical conductors, always assume that all conductors are energized and that insulation, clothing and hoses can conduct electricity. Use hose labeled and certified as non-conductive.

• To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.

TOOL STICKERS & TAGS


DANGER
Failure to use hydraulic hose labeled and certified as non-conductive when using hydraulic tools on or near electric lines may result in death or serious injury.
For proper and safe operation read owners manual and make sure that you have been properly trained in correct procedures required for work on or around electric lines.
ELECTROCUTION HAZARD

12412
DANGER DECAL

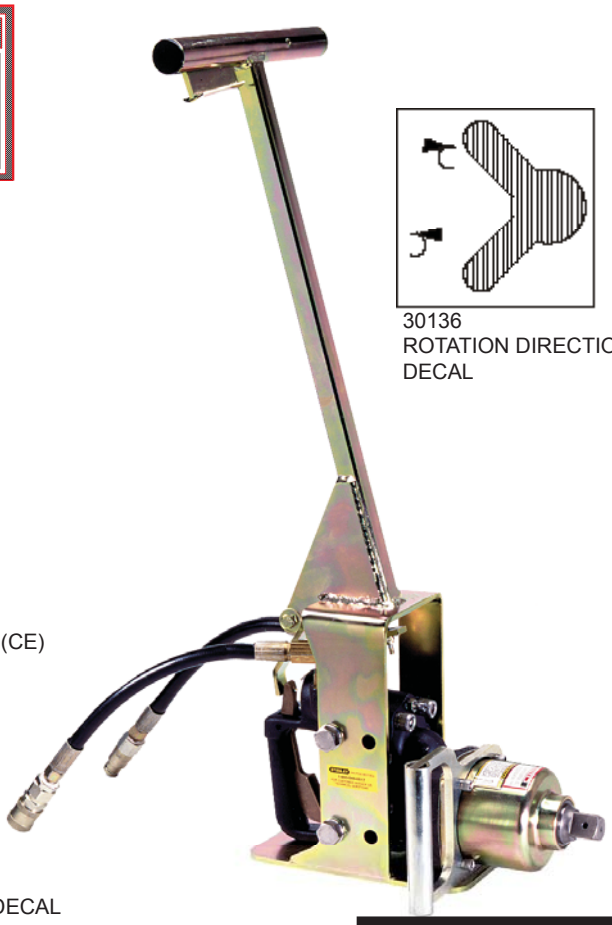
30136
ROTATION DIRECTION DECAL

66305
SOUND POWER LEVEL DECAL (CE)

28788
MANUAL DECAL (CE)

28323
CE DECAL (CE)

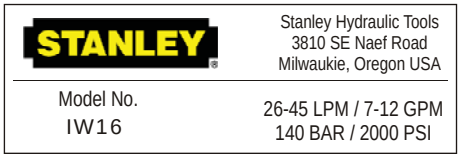
11207
CIRCUIT TYPE D DECAL (CE)



CAUTION
7-12 GPM / 20-46 LPM
DO NOT EXCEED 2000 PSI / 140 BAR
DO NOT EXCEED SPECIFIED FLOW OR PRESSURE
USE CLOSED-CENTER TOOLS ON CLOSED-CENTER SYSTEM. USE OPEN-CENTER TOOLS ON OPEN-CENTER SYSTEM. CORRECTLY CONNECT HOSES TO TOOL "IN" AND "OUT" PORTS. IMPROPER HANDLING, USE OR OTHER MAINTENANCE OF TOOLS COULD RESULT IN A LEAK, BURST OR OTHER TOOL FAILURE. CONTACT AT A LEAK OR BURST CAN CAUSE OIL INJECTION INTO THE BODY. FAILURE TO OBSERVE THESE PRECAUTIONS CAN RESULT IN SERIOUS PERSONAL INJURY.

09612
GPM DECAL

25610
RAILROAD HELP DESK DECAL



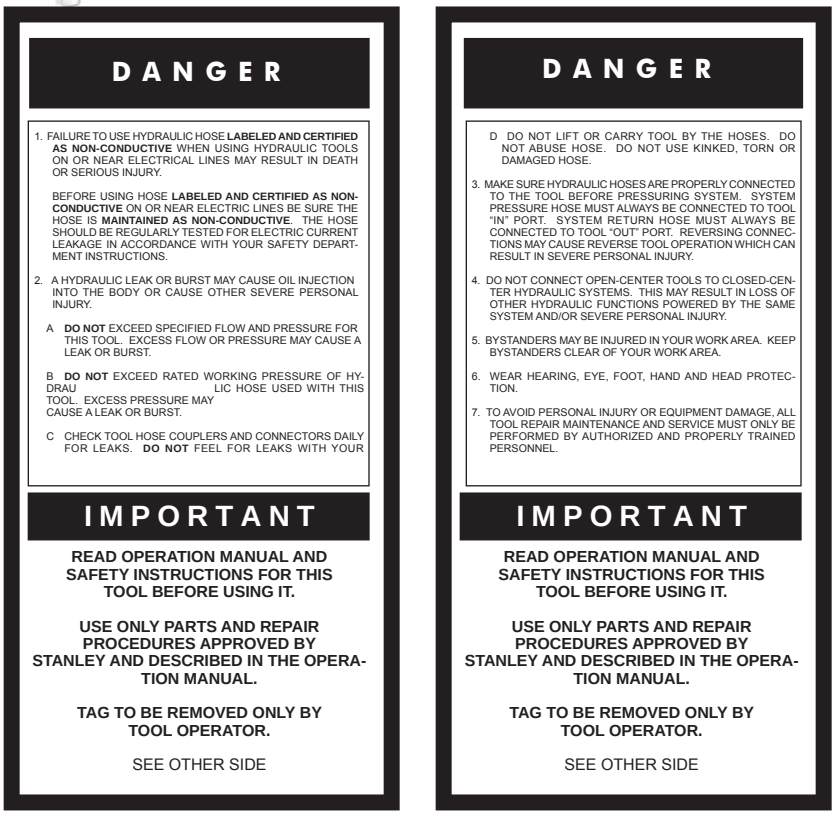
08153
IW16 NAME TAG (US & CE)

NOTE

THE INFORMATION LISTED ON THE STICKERS SHOWN, MUST BE LEGIBLE AT ALL TIMES.

REPLACE DECALS IF THEY BECOME WORN OR DAMAGED. REPLACEMENTS ARE AVAILABLE FROM YOUR LOCAL STANLEY DISTRIBUTOR.

The safety tag (p/n 15875) at right is attached to the tool when shipped from the factory. Read and understand the safety instructions listed on this tag before removal. We suggest you retain this tag and attach it to the tool when not in use.


DANGER
1. FAILURE TO USE HYDRAULIC HOSE LABELED AND CERTIFIED AS NON-CONDUCTIVE WHEN USING HYDRAULIC TOOLS ON OR NEAR ELECTRICAL LINES MAY RESULT IN DEATH OR SERIOUS INJURY.
BEFORE USING HOSE LABELED AND CERTIFIED AS NON-CONDUCTIVE ON OR NEAR ELECTRIC LINES BE SURE THE HOSE IS MAINTAINED AS NON-CONDUCTIVE. THE HOSE SHOULD BE REGULARLY TESTED FOR ELECTRIC CURRENT LEAKAGE IN ACCORDANCE WITH YOUR SAFETY DEPARTMENT INSTRUCTIONS.
2. A HYDRAULIC LEAK OR BURST MAY CAUSE OIL INJECTION INTO THE BODY OR CAUSE OTHER SEVERE PERSONAL INJURY.
A DO NOT EXCEED SPECIFIED FLOW AND PRESSURE FOR THIS TOOL. EXCESS FLOW OR PRESSURE MAY CAUSE A LEAK OR BURST.
B DO NOT EXCEED RATED WORKING PRESSURE OF HYDRAU LIC HOSE USED WITH THIS TOOL. EXCESS PRESSURE MAY CAUSE A LEAK OR BURST.
C CHECK TOOL HOSE COUPLERS AND CONNECTORS DAILY FOR LEAKS. DO NOT FEEL FOR LEAKS WITH YOUR
IMPORTANT
READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.
USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.
TAG TO BE REMOVED ONLY BY TOOL OPERATOR.
SEE OTHER SIDE
DANGER
D DO NOT LIFT OR CARRY TOOL BY THE HOSES. DO NOT ABUSE HOSE. DO NOT USE KINKED, TORN OR DAMAGED HOSE.
3. MAKE SURE HYDRAULIC HOSES ARE PROPERLY CONNECTED TO THE TOOL BEFORE PRESSURING SYSTEM. SYSTEM PRESSURE HOSE MUST ALWAYS BE CONNECTED TO TOOL "IN" PORT. SYSTEM RETURN HOSE MUST ALWAYS BE CONNECTED TO TOOL "OUT" PORT. REVERSING CONNECTIONS MAY CAUSE REVERSE TOOL OPERATION WHICH CAN RESULT IN SEVERE PERSONAL INJURY.
4. DO NOT CONNECT OPEN-CENTER TOOLS TO CLOSED-CENTER HYDRAULIC SYSTEMS. THIS MAY RESULT IN LOSS OF OTHER HYDRAULIC FUNCTIONS POWERED BY THE SAME SYSTEM AND/OR SEVERE PERSONAL INJURY.
5. BYSTANDERS MAY BE INJURED IN YOUR WORK AREA. KEEP BYSTANDERS CLEAR OF YOUR WORK AREA.
6. WEAR HEARING, EYE, FOOT, HAND AND HEAD PROTECTION.
7. TO AVOID PERSONAL INJURY OR EQUIPMENT DAMAGE, ALL TOOL REPAIR MAINTENANCE AND SERVICE MUST ONLY BE PERFORMED BY AUTHORIZED AND PROPERLY TRAINED PERSONNEL.
IMPORTANT
READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.
USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.
TAG TO BE REMOVED ONLY BY TOOL OPERATOR.
SEE OTHER SIDE

SAFETY TAG P/N 15875 (shown smaller then actual size)

HYDRAULIC HOSE REQUIREMENTS

HOSE TYPES

Hydraulic hose types authorized for use with Stanley Hydraulic Tools are as follows:

☒ Certified non-conductive

☒ Wire-braided (conductive)

☒ Fabric-braided (not certified or labeled non-conductive)

Hose ☒ listed above is the only hose authorized for use near electrical conductors.

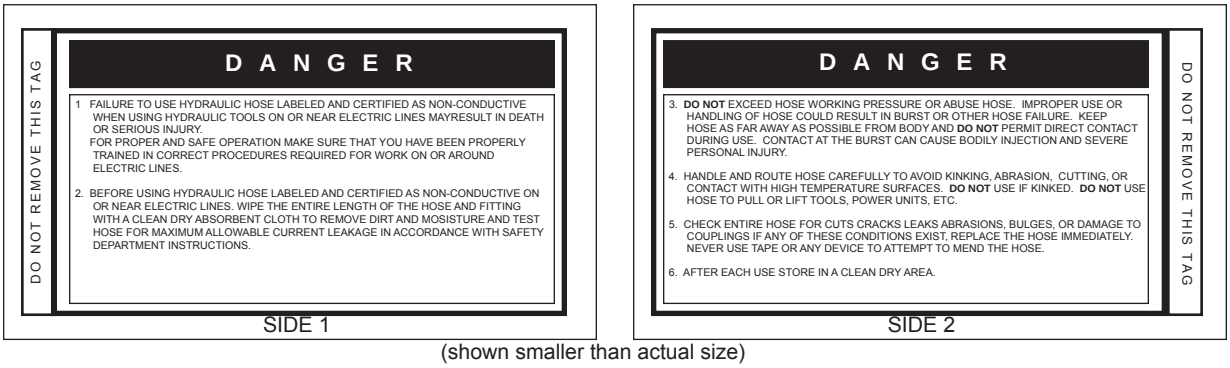
Hoses ☒ and ☒ listed above are **conductive** and **must never** be used near electrical conductors.

HOSE SAFETY TAGS

To help ensure your safety, the following DANGER tags are attached to all hose purchased from Stanley Hydraulic Tools. DO NOT REMOVE THESE TAGS.

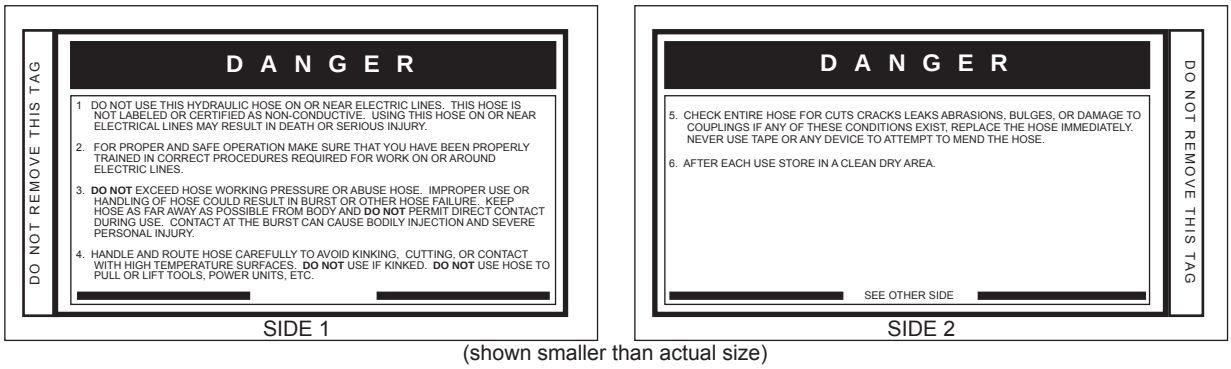
If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your Stanley Distributor.

THE TAG SHOWN BELOW IS ATTACHED TO "CERTIFIED NON-CONDUCTIVE" HOSE


DO NOT REMOVE THIS TAG
D A N G E R
1 FAILURE TO USE HYDRAULIC HOSE LABELED AND CERTIFIED AS NON-CONDUCTIVE WHEN USING HYDRAULIC TOOLS ON OR NEAR ELECTRIC LINES MAYRESULT IN DEATH OR SERIOUS INJURY.
FOR PROPER AND SAFE OPERATION MAKE SURE THAT YOU HAVE BEEN PROPERLY TRAINED IN CORRECT PROCEDURES REQUIRED FOR WORK ON OR AROUND ELECTRIC LINES.
2. BEFORE USING HYDRAULIC HOSE LABELED AND CERTIFIED AS NON-CONDUCTIVE ON OR NEAR ELECTRIC LINES. WIPE THE ENTIRE LENGTH OF THE HOSE AND FITTING WITH A CLEAN DRY ABSORBENT CLOTH TO REMOVE DIRT AND MOISTURE AND TEST HOSE FOR MAXIMUM ALLOWABLE CURRENT LEAKAGE IN ACCORDANCE WITH SAFETY DEPARTMENT INSTRUCTIONS.
SIDE 1
D A N G E R
3. DO NOT EXCEED HOSE WORKING PRESSURE OR ABUSE HOSE. IMPROPER USE OR HANDLING OF HOSE COULD RESULT IN BURST OR OTHER HOSE FAILURE. KEEP HOSE AS FAR AWAY AS POSSIBLE FROM BODY AND DO NOT PERMIT DIRECT CONTACT DURING USE. CONTACT AT THE BURST CAN CAUSE BODILY INJECTION AND SEVERE PERSONAL INJURY.
4. HANDLE AND ROUTE HOSE CAREFULLY TO AVOID KINKING, ABRASION, CUTTING, OR CONTACT WITH HIGH TEMPERATURE SURFACES. DO NOT USE IF KINKED. DO NOT USE HOSE TO PULL OR LIFT TOOLS, POWER UNITS, ETC.
5. CHECK ENTIRE HOSE FOR CUTS CRACKS LEAKS ABRASIONS, BULGES, OR DAMAGE TO COUPLINGS IF ANY OF THESE CONDITIONS EXIST, REPLACE THE HOSE IMMEDIATELY. NEVER USE TAPE OR ANY DEVICE TO ATTEMPT TO MEND THE HOSE.
6. AFTER EACH USE STORE IN A CLEAN DRY AREA.
DO NOT REMOVE THIS TAG
SIDE 2

(shown smaller than actual size)

THE TAG SHOWN BELOW IS ATTACHED TO "CONDUCTIVE" HOSE.


DO NOT REMOVE THIS TAG
D A N G E R
1 DO NOT USE THIS HYDRAULIC HOSE ON OR NEAR ELECTRIC LINES. THIS HOSE IS NOT LABELED OR CERTIFIED AS NON-CONDUCTIVE. USING THIS HOSE ON OR NEAR ELECTRICAL LINES MAY RESULT IN DEATH OR SERIOUS INJURY.
2. FOR PROPER AND SAFE OPERATION MAKE SURE THAT YOU HAVE BEEN PROPERLY TRAINED IN CORRECT PROCEDURES REQUIRED FOR WORK ON OR AROUND ELECTRIC LINES.
3. DO NOT EXCEED HOSE WORKING PRESSURE OR ABUSE HOSE. IMPROPER USE OR HANDLING OF HOSE COULD RESULT IN BURST OR OTHER HOSE FAILURE. KEEP HOSE AS FAR AWAY AS POSSIBLE FROM BODY AND DO NOT PERMIT DIRECT CONTACT DURING USE. CONTACT AT THE BURST CAN CAUSE BODILY INJECTION AND SEVERE PERSONAL INJURY.
4. HANDLE AND ROUTE HOSE CAREFULLY TO AVOID KINKING, CUTTING, OR CONTACT WITH HIGH TEMPERATURE SURFACES. DO NOT USE IF KINKED. DO NOT USE HOSE TO PULL OR LIFT TOOLS, POWER UNITS, ETC.
SIDE 1
D A N G E R
5. CHECK ENTIRE HOSE FOR CUTS CRACKS LEAKS ABRASIONS, BULGES, OR DAMAGE TO COUPLINGS IF ANY OF THESE CONDITIONS EXIST, REPLACE THE HOSE IMMEDIATELY. NEVER USE TAPE OR ANY DEVICE TO ATTEMPT TO MEND THE HOSE.
6. AFTER EACH USE STORE IN A CLEAN DRY AREA.
SEE OTHER SIDE
DO NOT REMOVE THIS TAG
SIDE 2

(shown smaller than actual size)

HOSE PRESSURE RATING

The rated working pressure of the hydraulic hose **must be equal to or higher than** the relief valve setting on the hydraulic system.

HTMA REQUIREMENTS

HYDRAULIC SYSTEM REQUIREMENTS	TOOL CATEGORY TYPE 1	 TYPEII	TYPEIII	TYPE RR
FLOW RATE	4-6 gpm (15-23 lpm)	7-9 gpm (26-34 lpm)	11-13 gpm (42-49 lpm)	9-10.5 gpm (34-40 lpm)
TOOL OPERATING PRESSURE (at the power supply outlet)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)
SYSTEM RELIEF VALVE SETTING (at the power supply outlet)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2200-2300 psi (152-159 bar)
MAXIMUM BACK PRESSURE (at tool end of the return hose)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)
Measured at a max. fluid viscosity of: (at min. operating temperature)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)
TEMPERATURE Sufficient heat rejection capacity to limit max. fluid temperature to: (at max. expected ambient temperature)	140° F (60° C)	140° F (60° C)	140° F (60° C)	140° F (60° C)
Min. cooling capacity at a temperature difference of between ambient and fluid temps	3 hp (2.24 kW) 40° F (22° C)	5 hp (3.73 kW) 40° F (22° C)	7 hp (4.47 kW) 40° F (22° C)	6 hp (5.22 kW) 40° F (22° C)
NOTE: Do not operate the tool at oil temperatures above 140° F (60° C). Operation at higher temperatures can cause operator discomfort at the tool.				
FILTER Min. full-flow filtration Sized for flow of at least: (For cold temp. startup and max. dirt-holding capacity)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)
HYDRAULIC FLUID Petroleum based (premium grade, anti-wear, non-conductive) VISCOSITY (at min. and max. operating temps)	100-400 ssu*	100-400 ssu* (20-82 centistokes)	100-400 ssu*	100-400 ssu*
NOTE: When choosing hydraulic fluid, the expected oil temperature extremes that will be experienced in service determine the most suitable temperature viscosity characteristics. Hydraulic fluids with a viscosity index over 140 will meet the requirements over a wide range of operating temperatures.				

*SSU = Saybolt Seconds Universal

NOTE:

These are general hydraulic system requirements. See tool Specification page for tool specific requirements.

OPERATION

WRENCH TORQUE INFORMATION

FACTORS THAT AFFECT TORQUE

An impact wrench is a rotary hammer that impacts the head of a bolt or nut. It does not apply a slow steady torque as a standard torque wrench. Therefore, several factors affect the result of torque when using impact wrenches:

1. **LONG BOLTS.** Long bolts having high-friction threads with lubrication under the bolt head or associated nut can twist when impacted, then untwist before the next impact. This will especially happen if there is low friction between the bolt head or nut and the mating surface.

2. **HEAVY, LOOSE OR MULTIPLE ADAPTERS**. Heavy, loose or multiple adapters between the wrench and socket can dissipate the intensity of the impact to the bolt head or nut.

3. **AMOUNT OF IMPACT.** Maximum torque results can be obtained by allowing continuous impacting of the socket against the bolt head or nut for at least 10 seconds.

4. **HYDRAULIC FLOW RATE.** If the flow rate to the tool is too low, the hammer (or impact) speed is reduced. If the flow is correct, a change in the relief pressure does not affect the impact force. Poorly designed hydraulic circuits can result in lower flow rates and reduced impact speeds when pressure is required during impacting.

BOLT GRADE AND THREAD RECOMMENDATIONS

Allowable bolt torque is limited by both bolt thread diameter and grade of steel in the bolt. The IW16 Impact Wrench is recommended for use on the following bolt grade and thread sizes:

SAE Grade 2	1-1/8 to 1-7/8 inch / 28.5/47.6 mm
SAE Grade 5	1 to 1-5/8 inch / 25.4-41.2 mm
SAE Grade 8	7/8 to 1-3/8 inch / 22.2-35 mm

PREOPERATION PROCEDURES

CHECK POWER SOURCE

1. Using a calibrated flow meter and pressure gauge, check that the hydraulic power source develops a flow of 7-12 gpm/20-45 lpm at 1000-2000 psi/70-140 bar.

2. Make certain that the hydraulic power source is equipped with a relief valve set to open at 2100 psi/145 bar minimum.

3. Check that the hydraulic circuit matches the tool for open-center (oc) operation.

CONNECT HOSES

1. Wipe all hose couplers with a clean, lint-free cloth before making connections.

2. Connect hoses from the hydraulic power source to the tool fittings or quick disconnects. It is good practice to connect the return hose first and disconnect it last to minimize or eliminate trapped pressure within the wrench.

3. Observe the flow indicators stamped on the main body assembly and the hose couplers to ensure that the flow is in the proper directions. The female couple on the tools “IN” port is the inlet (pressure) coupler.

Note:
If the uncoupled hoses are left in the sun, pressure increase within the hoses can make them difficult to connect. Whenever possible, connect the free ends of hoses together.

WRENCH OPERATION

The IW16 is designed for 1-inch square drive sockets. The 1-inch drive configuration is used with drive sockets for high impact (500-2500 ft lb / 680-3400 Nm) installation and removal of fasteners.

During normal operation it is common to see some grease leakage from around the anvil during hard use. Refer to the IW16 Service Manual for the correct lubrication procedures.

Use at the low end of the 500-2500 ft lb / 680-3400 Nm torque range during continuous use over long periods of time (impact times exceeding 10 seconds). The high temperature generated in the impact mechanism can reduce steel part and lubricant durability within the wrench.

1. Observe all Safety Precautions.

2. Move the hydraulic circuit control valve to the “ON” position to operate the wrench.

OPERATION

⚠ WARNING

Always use sockets and accessories designed for impact type applications. DO NOT USE STANDARD SOCKETS OR ACCESSORIES. THESE CAN CRACK OR FRACTURE DURING OPERATION.

3. Select the direction of impact desired using the reversing valve located on the side of the wrench. To select clockwise direction, place the valve in the upward position. To select counter-clockwise direction, place the valve in the downward position.

Note:
To more accurately tighten bolts, lubricate threads, check with a torque wrench and duplicate time of impacting for other bolts of the same length and thread size.

4. Squeeze the trigger to activate the wrench.

5. Release the trigger to stop the wrench.

COLD WEATHER OPERATION

If the wrench is to be used during cold weather, preheat the hydraulic fluid at low engine speed. When using the normally recommended fluids, fluid temperature should be at or above 50° F/10° C (400 ssu/82 centistokes) before use.

Damage to the hydraulic system or wrench can result from use with fluid that is too viscous or too thick.

EXTENSION HANDLE

If the handle and anchor block are removed, all valve handle/motor housing bolts must be cleaned, installed with Loctite 242 and retorqued. Contact Stanley authorized service for procedure.

EQUIPMENT PROTECTION & CARE

NOTICE

In addition to the Safety Precautions in this manual, observe the following for equipment protection and care.

- Make sure all couplers are wiped clean before connection.
- The hydraulic circuit control valve must be in the “OFF” position when coupling or uncoupling hydraulic tools. Failure to do so may result in damage to the quick couplers and cause overheating of the hydraulic system.
- Always store the tool in a clean dry space, safe from damage or pilferage.
- Make sure the circuit PRESSURE hose (with male quick disconnect) is connected to the “IN” port. The circuit RETURN hose (with female quick disconnect) is connected to the opposite port. Do not reverse circuit flow. This can cause damage to internal seals.
- Always replace hoses, couplings and other parts with replacement parts recommended by Stanley Hydraulic Tools. Supply hoses must have a minimum working pressure rating of 2500 psi/172 bar.
- Do not exceed the rated flow (see Specifications) in this manual for correct flow rate and model number. Rapid failure of the internal seals may result.
- Always keep critical tool markings, such as warning stickers and tags legible.
- Tool repair should be performed by experienced personnel only.
- Make certain that the recommended relief valves are installed in the pressure side of the system.
- Do not use the tool for applications for which it was not intended.

TROUBLESHOOTING

If symptoms of poor performance develop, the following chart can be used as a guide to correct the problem. When diagnosing faults in operation of the wrench, always check that the hydraulic power source is supplying the correct hydraulic flow and pressure to the tool as listed in the following table. Use a flow meter known to be accurate. Check the flow with the hydraulic fluid temperature at least 80° F/27° C.

PROBLEM	CAUSE	SOLUTION
Low performance or impact.	Incorrect hydraulic flow.	Check that the hydraulic power source is producing 7-12 gpm/20-45 lpm at 1500-2000 psi/105-140 bar.
	Defective quick disconnects.	Check each quick disconnect.
	Worn impact mechanism.	Repair or replace the impact mechanism. See Service Mechanism Removal Cleaning and Installation procedure to extend mechanism life.
	Hammer pins broken.	Replace with integral frame (with pins). Check relief adjustment screw setting. Job may require a larger wrench.
	Incorrect grease or periodic maintenance of the impact mechanism is not being performed.	See Service Instructions.
	Spools incorrectly installed.	Valve(s) incorrectly reassembled. See Service Instructions.
	Sockets or adapters too heavy or loose.	Use the correct impact type sockets or adapters.
	Long bolt with lubricated head.	Lubricate threads only.
Wrench runs too fast. Impact mechanism or screws broken.	Incorrect hydraulic flow (too high).	Check that hydraulic power source is producing 7-12 gpm/20-45 lpm at 1500-2000 psi/105-140 bar.
	Supply and return hoses reversed.	Install hoses correctly. Refer to Operation Instructions in this manual.
	Relief sleeve or spring damaged.	Remove and replace spool assembly.
	Adjusting screw is in too far.	Adjust correctly.
Grease leaks at anvil busing, wrench warm.	Hard duty cycle and heat forces grease out.	Normal unless greasing instructions in Service Instructions are not followed.
Grease leaks at anvil bushing, wrench cold.	Main shaft O-ring leaking.	Replace as required.
Oil leak at motor cap face.	Fasteners loose.	Tighten to recommended torque.
	Face O-ring worn or missing.	Replace as required.
	Motor cap/main housing damaged.	Replace as required.
Oil leaks at reversing spool.	Damaged O-rings.	Replace as required. Check Service Instructions to avoid cutting O-rings on cross holes in the spool bore.
	Wrong hydraulic fluid. Circuit too hot.	Refer to Operation Instructions for correct fluid/circuit specifications.

SPECIFICATIONS

Drive Size ..... 1-inch Square Drive
Weight (with Handle) ..... 44 lbs/20 kg
Overall Length ..... 14-1/2-inch/37 cm
Width (with Handle) ..... 11.5-inches/29 cm
Height (with Handle) ..... 33.5-inches/85 cm
Pressure Range ..... 1500-2000 psi/105-140 bar
Flow Range ..... 7-12 gpm/20-45 lpm
Optimum Flow ..... 8 gpm/30 lpm
System Type ..... EHTMA Type D, Open Center, HTMA Type II or RR
Porting ..... 8 SAE O-Ring
Output Speed (free spin) ..... 2000 rpm at 5 gpm/19 lpm
Input Speed ..... 1200 Impacts per Minute
Connect Size and Type ..... 3/8-inch Male Pipe Adapter
Torque ..... 500-2500 ft. lb/680-3400 Nm

Sound & Vibration Declaration	
Measured A-weighted sound power level, Lwa (ref. 1pW) in decibels	113.2 dBA
Uncertainty, Kwa, in decibels	3 dBA
Measured A-weighted sound pressure level, Lpa (ref. 20 µPa) at operator's position, in decibels	102.2 dBA
Uncertainty, Kpa, in decibels	3 dBA
Values determined according to noise test code given in ISO 15744, using the basic standard ISO3744 NOTE- The sum of a measured noise emision value and its associated uncertainty represents an upper boundry of the range of values which is likely to occur in measurements.	
Declared vibration emission value in accordance with EN 12096	
Measured vibration emmission value: a	18.1 m/sec²
Uncertainty: K	4.65 m/sec²

ACCESSORIES

DESCRIPTION	PART NUMBER
Adapter, 1-inch to 3/4-inch Drive	31201
Extension, 10 inch, 1-inch Drive	31203
Socket Retainer Pin, 1-inch Square Drive Socket	33276
Socket Retainer Ring, 1-inch Square Drive Socket	33277

SOCKETS

1-inch Square Drive 8-Point Deep x 1-1/4 inch	26529
1-inch Square Drive 8-Point Deep x 1-5/16 inch	25203
1-inch Square Drive 8-Point Deep x 1-3/8 inch	25204
1-inch Square Drive 8-Point Deep x 1-1/2 inch	25205
1-inch Square Drive 8-Point Deep x 1-9/16 inch	25206
1-inch Square Drive 8-Point Deep x 1-5/8 inch*	25216
1-inch Square Drive 8-Point Deep x 1-11/16 inch*	25218
1-inch Square Drive 8-Point Deep x 1-3/4 inch	25207
1-inch Square Drive 8-Point Deep x 1-13/16 inch*	25217
1-inch Square Drive 8-Point Deep x 1-7/8 inch	25208
1-inch Square Drive 8-Point Deep x 2 inch	25209
1-inch Square Drive 8-Point Deep x 2-1/8 inch	25210
1-inch Square Drive 8-Point Deep x 2-3/16 inch*	25211
1-inch Square Drive 8-Point Deep x 2-1/4 inch	25212
1-inch Square Drive 8-Point Deep x 2-3/8 inch	25213
1-inch Squre Drive #70 Torx*	26456
1-inch Square Drive 4-Point x 1 inch*	27710

SOCKET SETS

Socket Set, Includes 6 Sockets* (25211, 25216, 25217, 25218, 26456, 27710)	33230

IW16157 PARTS ILLUSTRATION

⚠ CAUTION

Make sure the correct capscrew is used in the correct location

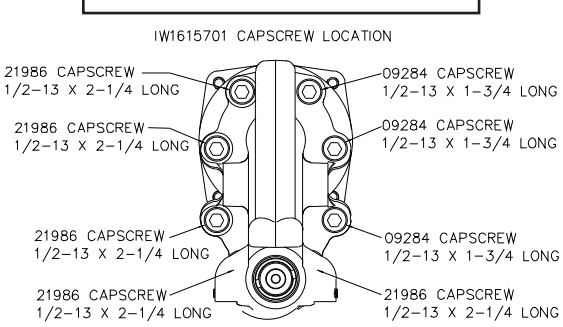
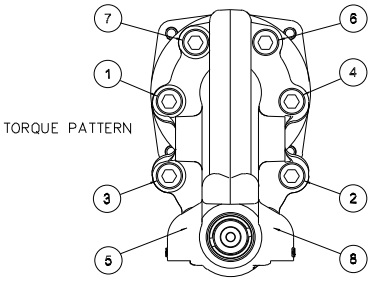
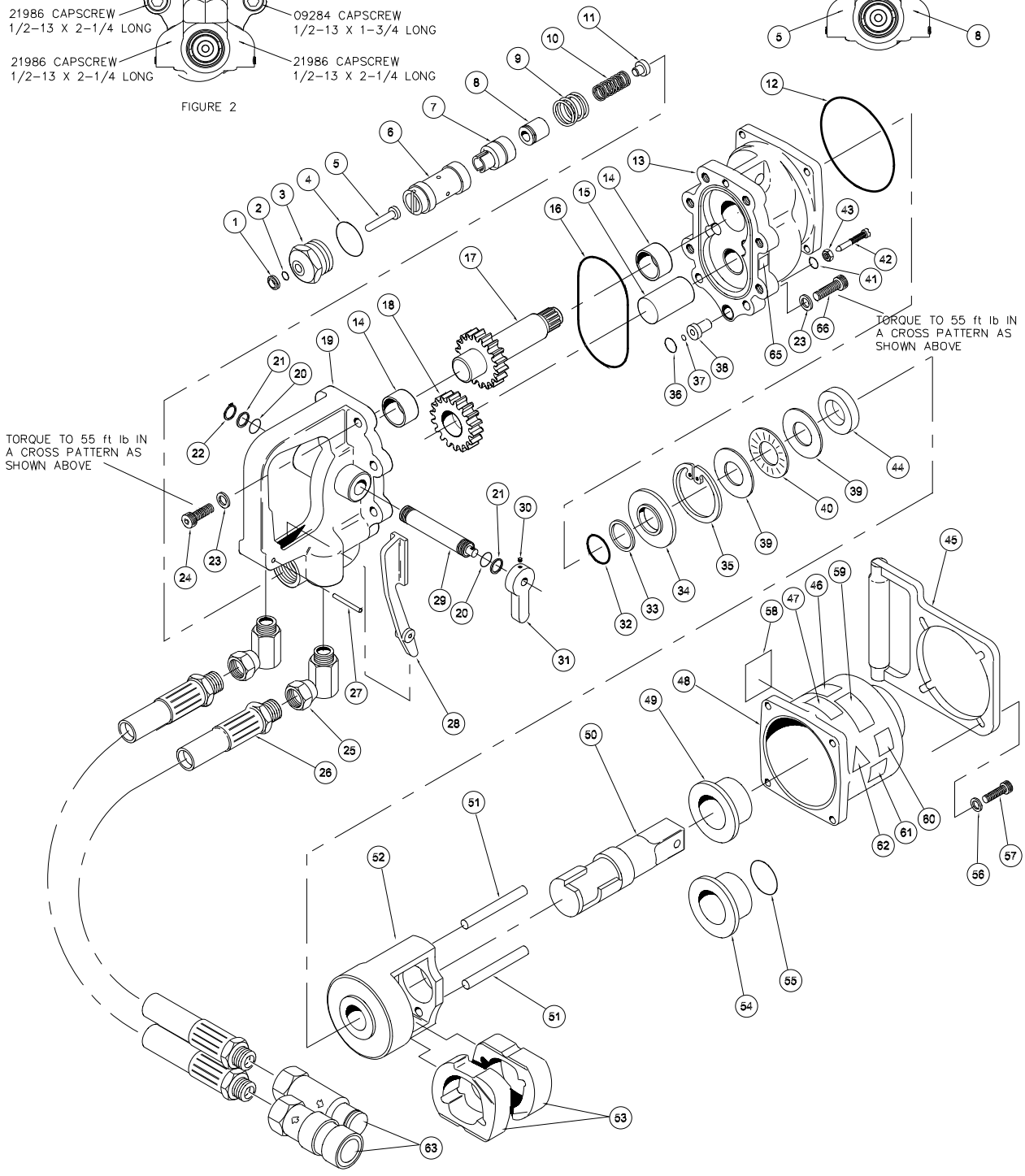
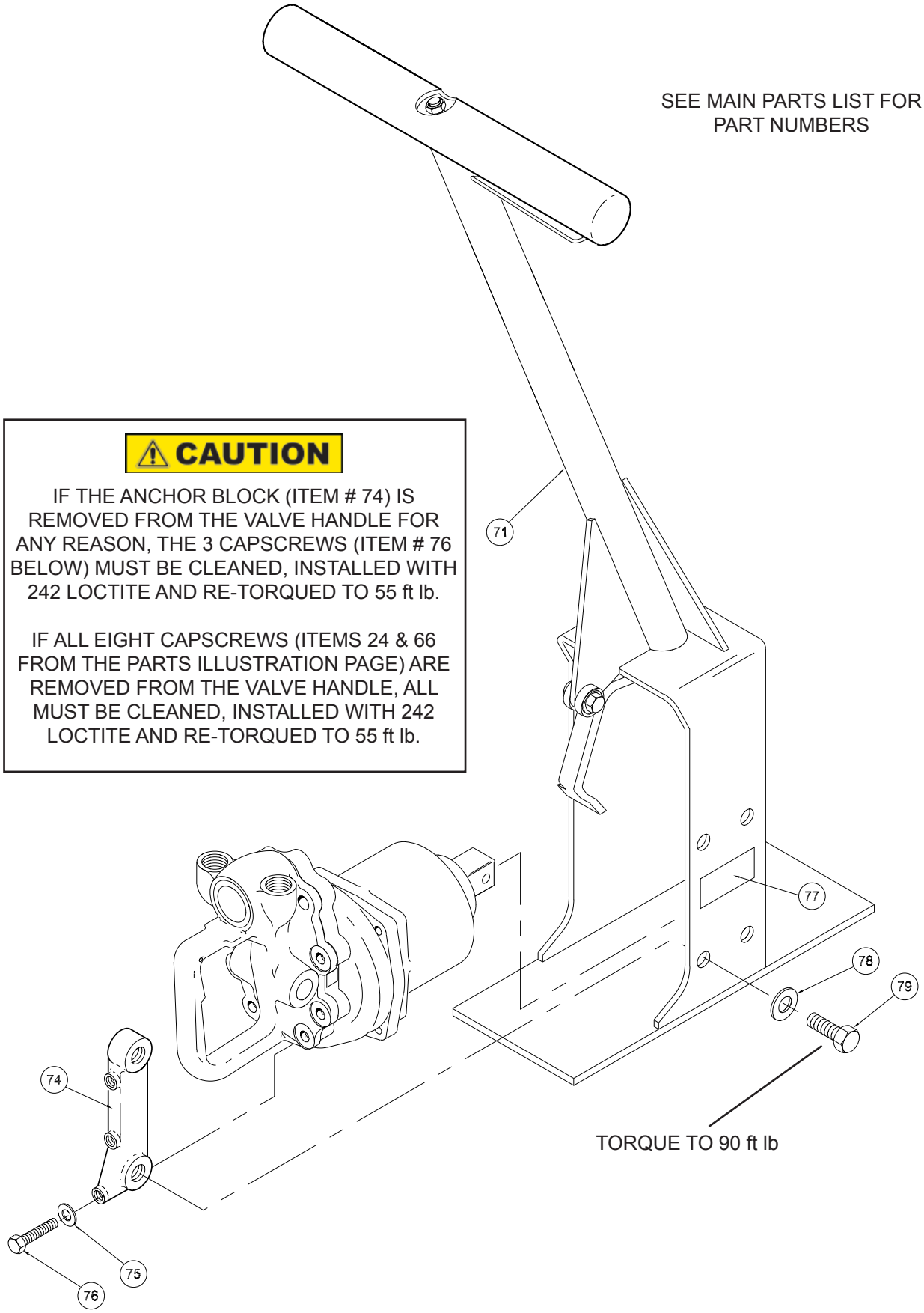

IW1615701 CAPSCREW LOCATION
21986 CAPSCREW 1/2-13 X 2-1/4 LONG
09284 CAPSCREW 1/2-13 X 1-3/4 LONG
21986 CAPSCREW 1/2-13 X 2-1/4 LONG
09284 CAPSCREW 1/2-13 X 1-3/4 LONG
21986 CAPSCREW 1/2-13 X 2-1/4 LONG
09284 CAPSCREW 1/2-13 X 1-3/4 LONG
21986 CAPSCREW 1/2-13 X 2-1/4 LONG
21986 CAPSCREW 1/2-13 X 2-1/4 LONG

FIGURE 2





IW16157 EXT. HANDLE ILLUSTRATION


SEE MAIN PARTS LIST FOR
PART NUMBERS
CAUTION
IF THE ANCHOR BLOCK (ITEM # 74) IS REMOVED FROM THE VALVE HANDLE FOR ANY REASON, THE 3 CAPSCREWS (ITEM # 76 BELOW) MUST BE CLEANED, INSTALLED WITH 242 LOCTITE AND RE-TORQUED TO 55 ft lb.
IF ALL EIGHT CAPSCREWS (ITEMS 24 & 66 FROM THE PARTS ILLUSTRATION PAGE) ARE REMOVED FROM THE VALVE HANDLE, ALL MUST BE CLEANED, INSTALLED WITH 242 LOCTITE AND RE-TORQUED TO 55 ft lb.
71
74
75
76
77
78
79
TORQUE TO 90 ft lb

IW16157 PARTS LIST

ITEM NO.	PART NO.	QTY	DESCRIPTION
1	22064	1	ROD WIPER
2	00026	1	O-RING
3	22063	1	SPOOL CAP
4	06533	1	O-RING
5	23678	1	HEADED PUSH PIN
6	07998	1	ON/OFF SPOOL WELDMENT
7	07986	1	RELIEF SEAT
8	08135	1	RELIEF POPPET
9	08131	1	SPRING
10	08122	1	COIL SPRING
11	07982	1	SPRING REST
12	00255	1	O-RING
13	08137	1	MOTOR HOUSING ASSY (INCL. ITEMS 14, 15, 38, 41)
14	08146	2	BUSHING
15	08123	1	IDLER SHAFT
16	00255	1	O-RING
17	08136	1	MAIN SHAFT
18	08128	1	IDLER GEAR ASSY
19	17279	1	VALVE HANDLE ASSY (INCL. ITEM 14)
20	01211	2	O-RING
21	08015	2	SPIRAL BACK-UP RING
22	08016	1	RETAINING RING
23	00706	8	LOCKWASHER
24	09284	3	CAPSCREW 1/2-13 X 1-3/4 LONG
25	58631	2	90° SWIVEL FITTING
26	56725	2	HOSE ASSY
	03288	1	CAP, 3/8 IN (IW16157 ONLY)
	02324	1	CAP, 1/2 IN (IW16157 ONLY)
27	05965	1	ROLL PIN
28	08133	1	TRIGGER
29	08139	1	REVERSING SPOOL
30	01607	1	SETSCREW
31	04939	1	LEVER
32	04888	1	O-RING
33	08180	1	BACK-UP RING-124
34	08125	1	SEAL BACK-UP WASHER
35	00663	1	RETAINER RING
36	00016	1	O-RING
37	00717	1	O-RING
38	07995	1	INSERT
39	08147	2	THRUST BEARING RACE
40	08148	1	THRUST NEEDLE BEARING
41	00717	1	O-RING
42	07984	1	RELIEF ADJUSTMENT SCREW
43	00429	1	HEX NUT
44	23817	1	THRUST SPACER

ITEM NO.	PART NO.	QTY	DESCRIPTION
45	32087	1	ASSIST HANDLE
46	09612	1	GPM STICKER 4-12 2000
47	08153	1	NAME TAG-IW16
48	24682	1	HAMMER CASE, LAND (INCL. ITEM 49)
49	21010	1	BUSHING
50	24678	1	ANVIL
51	24680	2	HAMMER PIN (INCL. ITEM 52)
52	24679	1	HAMMER FRAME
53	24677	2	HAMMER
54	---	-	NO ITEM
55	---	-	NO ITEM
56	00231	4	LOCK WASHER
57	09625	4	CAPSCREW
58	66305	1	STICKER, SOUND POWER (IW1615701 ONLY)
59	12412	1	STICKER, DANGER
60	28788	1	STICKER, MANUAL (IW1615701 ONLY)
61	28323	1	STICKER, CE (IW1615701 ONLY)
62	11207	1	STICKER, CIRCUIT TYPE D (IW1615701 ONLY)
63	24069	1	COUPLER SET
64	---	--	NO ITEM
65	30136	1	STICKER, ROTATION
66	21986	5	CAPSCREW 1/2-13 X 2-1/4 LONG
71	31916	1	REMOTE HANDLE ASSY
74	17263	1	ANCHOR BLOCK ASSY
75	00697	3	LOCKWASHER
76	21986	3	CAPSCREW 1/2-13 X 2-1/4 LONG
77	25610	1	STICKER, RAILROAD HELP DESK (IW16157 ONLY)
78	371071	2	LOCKWASHER
79	10792	2	CAPSCREW 5/8-11 X 1-1/4 LONG
	23134	**1**	**STANDARD MECHANISM (INCL. ITEMS 48-53)**
	09602	**1**	**SEAL KIT**

31916, Remote Handle Assy (see page 17).

WARRANTY

Stanley Hydraulic Tools (hereinafter called “Stanley”), subject to the exceptions contained below, warrants new hydraulic tools for a period of one year from the date of sale to the first retail purchaser, or for a period of 2 years from the shipping date from Stanley, whichever period expires first, to be free of defects in material and/or workmanship at the time of delivery, and will, at its option, repair or replace any tool or part of a tool, or new part, which is found upon examination by a Stanley authorized service outlet or by Stanley’s factory in Milwaukie, Oregon to be DEFECTIVE IN MATERIAL AND/OR WORKMANSHIP.

EXCEPTIONS FROM WARRANTY

NEW PARTS: New parts which are obtained individually are warranted, subject to the exceptions herein, to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage. Seals and diaphragms are warranted to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage or 2 years after the date of delivery, whichever period expires first. Warranty for new parts is limited to replacement of defective parts only. Labor is not covered.

FREIGHT COSTS: Freight costs to return parts to Stanley, if requested by Stanley for the purpose of evaluating a warranty claim for warranty credit, are covered under this policy if the claimed part or parts are approved for warranty credit. Freight costs for any part or parts which are not approved for warranty credit will be the responsibility of the individual.

SEALS & DIAPHRAGMS: Seals and diaphragms installed in new tools are warranted to be free of defects in material and/or workmanship for a period of 6 months after the date of first usage, or for a period of 2 years from the shipping date from Stanley, whichever period expires first.

CUTTING ACCESSORIES: Cutting accessories such as breaker tool bits are warranted to be free of defects in material and or workmanship at the time of delivery only.

ITEMS PRODUCED BY OTHER MANUFACTURERS: Components which are not manufactured by Stanley and are warranted by their respective manufacturers.

a. Costs incurred to remove a Stanley manufactured component in order to service an item manufactured by other manufacturers.

ALTERATIONS & MODIFICATIONS: Alterations or modifications to any tool or part. All obligations under this warranty shall be terminated if the new tool or part is altered or modified in any way.

NORMAL WEAR: any failure or performance deficiency attributable to normal wear and tear such as tool bushings, retaining pins, wear plates, bumpers, retaining rings and plugs, rubber bushings, recoil springs, etc.

INCIDENTAL/CONSEQUENTIAL DAMAGES: To the fullest extent permitted by applicable law, in no event will STANLEY be liable for any incidental, consequential or special damages and/or expenses.

FREIGHT DAMAGE: Damage caused by improper storage or freight handling.

LOSS TIME: Loss of operating time to the user while the tool(s) is out of service.

IMPROPER OPERATION: Any failure or performance deficiency attributable to a failure to follow the guidelines and/or procedures as outlined in the tool’s operation and maintenance manual.

MAINTENANCE: Any failure or performance deficiency attributable to not maintaining the tool(s) in good operating condition as outlined in the Operation and Maintenance Manual.

HYDRAULIC PRESSURE & FLOW, HEAT, TYPE OF FLUID: Any failure or performance deficiency attributable to excess hydraulic pressure, excess hydraulic back-pressure, excess hydraulic flow, excessive heat, or incorrect hydraulic fluid.

REPAIRS OR ALTERATIONS: Any failure or performance deficiency attributable to repairs by anyone which in Stanley’s sole judgement caused or contributed to the failure or deficiency.

MIS-APPLICATION: Any failure or performance deficiency attributable to mis-application. “Mis-application” is defined as usage of products for which they were not originally intended or usage of products in such a matter which exposes them to abuse or accident, without first obtaining the written consent of Stanley. PERMISSION TO APPLY ANY PRODUCT FOR WHICH IT WAS NOT ORIGINALLY INTENDED CAN ONLY BE OBTAINED FROM STANLEY ENGINEERING.

WARRANTY REGISTRATION: STANLEY ASSUMES NO LIABILITY FOR WARRANTY CLAIMS SUBMITTED FOR WHICH NO TOOL REGISTRATION IS ON RECORD. In the event a warranty claim is submitted and no tool registration is on record, no warranty credit will be issued without first receiving documentation which proves the sale of the tool or the tools’ first date of usage. The term “DOCUMENTATION” as used in this paragraph is defined as a bill of sale, or letter of intent from the first retail customer. A WARRANTY REGISTRATION FORM THAT IS NOT ALSO ON RECORD WITH STANLEY WILL NOT BE ACCEPTED AS “DOCUMENTATION”.

NO ADDITIONAL WARRANTIES OR REPRESENTATIONS

This limited warranty and the obligation of Stanley thereunder is in lieu of all other warranties, expressed or implied including merchantability or fitness for a particular purpose except for that provided herein. There is no other warranty. This warranty gives the purchaser specific legal rights and other rights may be available which might vary depending upon applicable law.

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